GROUND WATER QUALITY DISCHARGE PERMIT MODIFICATION NO. 5

STATEMENT OF BASIS

Low-Level and 11e.(2) Radioactive Waste Disposal Facility

Envirocare of Utah, Inc.
605 North 5600 West
Salt Lake City, Utah 84116

September 10, 2003

Purpose

The purpose of this Statement of Basis is to describe changes made recently to Ground Water Quality Discharge Permit No. UGW450005 (Permit) for the Envirocare of Utah, Inc. (Envirocare) Low-Level and 11e.(2) radioactive waste disposal facility near Clive, Tooele County, Utah, located in Section 32, Township 1 South, Range 11 West, SLBM.

Major Changes

The major changes in this Permit modification are associated with the redesign of the cover system for the side slope areas of the Low Activity Radioactive Waste (LARW) Disposal Cell. In a letter dated May 30, 2003, Envirocare requested a Permit modification to redesign the LARW cover on the side slopes to allow mobile waste to placed in the remaining open areas of the LARW Cell in order to expedite cell closure. This redesign will include: 1) adding a sacrificial soil layer in the side slopes of the cell between the Type A and Type B filter layers, and 2) decreasing the thickness of the lower radon barrier from six feet to one foot. The currently approved cover system design for the side slopes of the LARW Cell is summarized from top to bottom in Table 1 below.

Table 1
Currently Approved Cover System for the LARW Cell Side Slopes

Layer	Thickness
Type B Rip Rap Rock Armor	18 inches
Type A Filter Zone	6 inches
Type B Filter Zone	6 inches
Upper Radon Barrier (K=5.0E-8 cm/sec)	12 inches
Lower Radon Barrier (K=1.0E-6 cm/sec)	72 inches

The current LARW side slope cover design shown in Table 1 does not include a sacrificial soil layer between the Type A and Type B filter layers, which restricts mobile waste from being placed in the side slope areas of the LARW Cell. Placement of mobile waste has been limited to the top slope area of the LARW Cell because of the inclusion of the sacrificial soil layer in the top slope cover design. The proposed cover redesign is identical to the recently approved cover design for the Class A Disposal Cell, which is summarized in Table 2 below.

Table 2
Proposed Redesign Cover System for the LARW Cell Side Slopes

Layer	Thickness
Type B Rip Rap	18 inches
Type A Filter Zone	6 inches
Sacrificial Frost Protection Soil	12 inches
Type B Filter Zone	6 inches
Upper Radon Barrier (K=5.0E-8 cm/sec)	12 inches
Lower Radon Barrier (K=1.0E-6 cm/sec)	12 inches

As indicated above, the purpose of the side slope cover redesign is to allow mobile waste, which has been limited only to the top slope area of the LARW Cell, to be placed in the side slope areas. This change will expedite the closure of the LARW Cell by making mobile waste available for disposal in the currently open side slope areas. The reduction of the lower radon barrier thickness has recently been approved for the Class A Cell and the same technical justification is provided below for the LARW Cell. To implement the redesigned cover described above, the following changes have been made to the Permit.

1. Parts I.D.2.a.2, I.D.2.a.3, and I.D.2.a.4, Final Authorized LARW Cell Engineering Design and Specifications – the asterisk footnote symbol (*)and the associated footnote have been struck, which will eliminate the distinction between the top slope and side slope cover designs regarding the presence or absence of the sacrificial frost protection soil layer.

2. Part I.D.2.a.5, Final Authorized LARW Cell Engineering Design and Specifications – the overall thickness of the two-layer radon barrier has been reduced from 7 feet to 2 feet in Part I.D.2.a.5. Although the thickness of the upper radon barrier in Part I.D.4.a.5.i will remain the same at one foot, the thickness of the lower radon barrier in Part I.D.4.a.5.ii has been reduced from 6 feet to one foot.

3. Table 2A: Approved LARW Cell Engineering Design Drawings – Table 2A has been updated by adding revised and new engineering design drawings to reflect the LARW cover design changes described above.

4. Part I.D.10 and Table 4, Disposal Location Restrictions for Mobile Waste in the LARW Disposal Cell – because the side slope cover design will include the sacrificial soil layer between the Type A and Type B filter layers and will match the design of the top slope area, this effectively removes the disposal location restriction for mobile waste in the LARW Cell. Therefore, Part I.D.10 and Table 4 have been struck from the Permit.

Technical Justification for LARW Side Slope Cover Redesign

Prior to approving the Permit changes cited above, Division of Radiation Control (DRC) staff conducted a thorough review of Envirocare's requested design changes to the cover system of the LARW Disposal Cell. A summary of this review is provided below.

Addition of Sacrificial Soil Layer

Previous modeling of the existing LARW cell without a sacrificial frost protection layer predicted an infiltration rate of 0.592 inches per year (in/yr) through a 160-foot side-slope located below 400 feet of top slope. In comparison, the predicted infiltration rate through the frost-protected side slope of the Class A Cell is 0.143 in/yr, which includes the effects of run-on from a longer top slope (540 feet vs 400 feet). The short slope length, steep slope, and frost protection layer serve to efficiently route water off the side slope, as demonstrated by the HELP infiltration model results. The predicted infiltration rate through the side slope without a sacrificial soil layer increases from 0.143 in/yr to 0.676 in/yr assuming that the permeability of the upper radon barrier will be degraded 100 times due to freeze/thaw effects. Therefore, the addition of a sacrificial soil layer to the LARW side slope cover is a conservative change and is technically justified because it will reduce infiltration through the side slope.

During the engineering review of the redesign drawings, DRC staff noted that transition section DD in drawing 03046-V01 indicated a 4:1 slope for the sacrificial soil layer which is steeper than the 5:1 slope used in the performance modeling. DRC staff expressed concern for potential channeling at the transition zone as a result of this slope change. Consequently, Envirocare changed the slope to 5:1 to be consistent with the modeled condition and resubmitted revised drawings to the DRC.

Reduction of Lower Radon Barrier

The effects of reducing the thickness of the lower radon barrier from six feet to one foot was reviewed by analyzing the following three critical performance parameters:

- Infiltration;
- Radon Attenuation; and
- Bio-intrusion.

Infiltration. On July 19, 2000, Envirocare submitted a report titled "Revised Western LARW Cell Infiltration and Transport Modeling" (Whetstone Associates, 2000). The purpose of this report was to provide the assumptions, input parameters, and results of infiltration and fate and transport modeling which are intended to demonstrate compliance with the Permit performance standards of the Class A Disposal Cell. Infiltration through the cover system of the Class A Disposal Cell was evaluated using the EPA Hydrologic Evaluation of Landfill Performance (HELP) model, a quasi-two-dimensional code developed by Paul Schroeder of the U.S. Army Corps of Engineers and R. Lee Peyton at University of Missouri. The HELP code is distributed by the EPA and has widespread acceptance as a tool for the evaluation of the hydrologic performance of landfills. The HELP code was used previously in the prediction of infiltration through the LARW and 11e.(2) disposal cells, and has been accepted by the Utah Division of Radiation Control. After a series of interrogatories,

the Whetstone performance modeling report was approved by the DRC. This report is also applicable to the redesigned side slope cover of the LARW Cell because the designs are the same.

In the base case HELP simulation of infiltration through the cover system, the thickness of the lower radon barrier (K=1.0E-6 cm/sec) was set at 6 feet. Section 3.5 of the Whetstone report included sensitivity testing of infiltration through the cover system of the using the HELP model. The purpose of a sensitivity test is to evaluate the influence of one particular parameter by varying the value of this parameter while keeping all other parameters constant. In this case, the tested parameter was the thickness of the lower radon barrier. In three different HELP model simulations of infiltration through the cover, the thickness of the lower radon barrier was varied at 3 feet, 2 feet, and 1 foot while all other parameters were kept constant. The infiltration results of all three HELP sensitivity tests were identical to the base case infiltration of 0.104 inches/year (0.265 cm/year). Based on these sensitivity test results, reducing the thickness of the lower radon barrier from 6 feet to one foot has no effect on infiltration through the cover, which indicates that infiltration is controlled by the 1-foot thick upper radon barrier (K=5.0E-8 cm/sec) and the overlying lateral drainage layer (Type B Filter). As a result, Envirocare's request to decrease the thickness of the lower radon barrier from 6 feet to one foot will have no consequence on infiltration and therefore, is technically justified.

Radon Attenuation. The EPA rules in 40 CFR Part 192 require that the cover system of a uranium mill tailings disposal cell be designed to provide reasonable assurance that the release rate of radon-222 will not exceed a value of 20 pCi/m^2s for a period of 1000 years to the extent reasonably achievable and in any case for at least 200 years when averaged over the disposal area over at least a one-year period. The NRC regulations in 10 CFR Part 40 require that the radon-222 release rate not exceed 20 pCi/m^2s at the surface of earthen uranium mill tailings covers. To demonstrate compliance with the radon release standard, Envirocare's March 29, 2002 submittal included a report titled "Evaluation of Envirocare's Mixed Waste Radon Barrier" (CD00-0747). This report provided an evaluation of radon flux attenuation through a reduced radon barrier using RADON, a computer program developed by the NRC in June 1989. To verify the radon flux results submitted by Envirocare, DRC staff conducted an empirical review by putting the RADON program equations in a spreadsheet. When the input parameters provided in the Envirocare report were plugged into the DRC spreadsheet, the results did not correspond with the results of the Envirocare report. Upon further review, DRC staff determined that the results in the conclusion of the report did not correspond to the output printouts from the RADON program. However, the RADON output printouts did correspond with the results from the DRC spreadsheet. After DRC staff notified Envirocare of these inconsistencies, Envirocare realized that they had submitted an old version of the report, which had not been updated from previous DRC interrogatories for the Mixed Waste Radon Barrier report. To rectify this error, Envirocare submitted a new radon flux evaluation on February 5, 2003 for the Class A Cell Radon Barrier, which incorporated corrections from previous DRC interrogatories.

For the purpose of evaluating radon flux attenuation, the difference in permeability between the upper radon barrier layer (5.0E-8 cm/sec) and the lower radon barrier layer (1.0E-6 cm/sec) is not significant. Therefore, the upper and lower radon barrier layers were treated as a single radon barrier with a thickness of 2 feet (61 cm). One of the critical parameters in the evaluation of radon

attenuation is the moisture content of the cover materials in terms of weight %. The higher the moisture content of the cover materials, the greater the attenuation of radon flux. The moisture content given in the February 5, 2003 Envirocare report is 25.6% by weight, a value established by direct measurement of 20 clay samples from three different clay borrow areas at the Clive, Utah site. The clay samples were collected in accordance with NRC Regulatory Guide 3.64, "Calculation of Radon Flux Attenuation By Earthen Uranium Mill Tailings Covers" (NRC, 1989). Although moisture content measurements varied from 41.4% to 25.6%, Envirocare elected to use lowest moisture content value of 25.6%, which is conservative.

To evaluate the moisture content value obtained by direct measurement from the clay borrow area, DRC staff compared the measured value of 25.6% against the moisture content predicted by UNSAT-H modeling for the Class A Cell performance modeling (Whetstone Associates, 2000). Table 17 of the Whetstone report provides moisture content results derived from various UNSAT-H modeling runs. A moisture content of 0.4180 vol/vol was derived for the lower radon barrier from the low precipitation model run which is conservative. Converting the volumetric moisture content of 0.4180 to weight % gives a value of approximately 31%, which is higher than the 25.6% moisture content obtained by direct measurement. Therefore, using the measured moisture content of 25.6% is conservative for calculating radon flux attenuation.

Using a moisture content of 25.6% by weight, the thickness of the radon barrier would need to be at least 1.08 feet (33 cm) to attenuate the resulting radon flux to less than 20 pCi/m^2s. However, the Envirocare Construction QA/QC manual requires that radon barrier be placed with a moisture content between optimum and 5% by weight over optimum. In a phone conversation with Rex Leach, Construction Quality Control manager of Envirocare, the average optimum value for radon barrier placed during 2002 was approximately 22.5% by weight with a minimum value of 18%. Plugging these two moisture content values into the DRC radon attenuation spreadsheet gives radon barrier thicknesses of 1.16 feet (35.4 cm) and 1.27 feet (38.6 cm), respectively, which are well below the proposed 2-foot (61 cm) radon barrier thickness. Therefore, even in the short term, the proposed 2-foot (61 cm) radon barrier is conservative and will attenuate the resulting radon flux to a value less than 20 pCi/m^2s.

Bio-intrusion. As part of the license amendment application for the Class A Disposal Cell, Envirocare submitted a report titled "Assessment of Vegetative Impacts on LLRW" (SWCA, Inc., 2000). This report is also applicable to the LARW Disposal Cell. The objective of this report was to evaluate the potential for root systems of native vegetation to penetrate and compromise the integrity of the cover of the Class A Disposal Cell in South Clive, Utah. In particular, black greasewood was examined closely because it has the ability to grow very deep taproots and is a dominant species within the local plant community. Other local plants are not much of a bio-intrusion concern because they have shallow root depths less than 3.5 feet below the surface, which would not impact the radon barrier.
As part of Envirocare's Class B/C Cell license amendment application dated November 1, 1999, a Vegetation Impact Calculation Sheet was provided in Appendix K-3. For the abnormal condition, the calculation sheet indicates that the area degraded by black greasewood roots penetrating into the radon barrier would be 0.00683%. The NRC has evaluated the loss of radon attenuation effectiveness due to cracks and other defects in the covers of uranium mill tailings (NUREG/CR-

3533, 1984). In this study, the NRC published a correlation curve (Figure 17) by plotting the percent area disrupted by defects on the x-axis versus the percent loss of cover effectiveness on the y-axis. The minimum value on the x-axis of Figure 17 is 0.2 % area disrupted by defects. The Vegetation Impact Calculation Sheet discussed above indicated that the area of roots penetrating into the radon barrier would be 0.00683%. As shown by NRC Figure 17, there would be less than a 3% loss of cover effectiveness with a 0.2% area disrupted by defects. The proposed cover will have a radon barrier comprised of 2 feet (61 cm) of compacted clay material. However, at the 25.6% moisture content, only 1.08 feet (33 cm) of clay material would be required to meet the radon attenuation performance standard. As a result, construction of the proposed 2-foot (61 cm) radon barrier will provide a safety factor of 85%. Therefore, defects in the radon barrier caused by the bio-intrusion of black greasewood roots should not have a significant impact on the radon attenuation.

The wilting point is another parameter that the DRC staff used to evaluate the potential for bio-intrusion of the radon barrier. As a plant root penetrates into a soil, a cone of depression develops where soil near the root is drier than the surrounding soil due to transpiration. The soil could continue to dry until it reaches its wilting point, or the lower limit of available water retained by the soil. The lowest and most conservative wilting point value for clay radon barrier used for the Envirocare site is 0.187 vol/vol, which was used in the report titled "Volume I LARW Infiltration Modeling Input Parameters and Results" (ABC, 1997). Converting the volumetric wilting point of 0.187 to weight % gives a value of approximately 13.8%. Assuming the worst-case scenario where the entire radon barrier dries to this conservative wilting point of 13.8%, DRC staff determined that a 1.35-foot (41 cm) radon barrier would be adequate to meet the radon-222 release standard. Therefore, the proposed radon barrier thickness of 2 feet (61 cm) is conservative and technically justified.

Summary and Conclusions. The DRC staff has conducted a technical evaluation to determine if Envirocare's request to redesign the side slope cover is justified. The two design changes include adding a 12-inch sacrificial soil layer between the Type A and Type B filter layers, and decreasing the lower radon barrier from 6 feet to one foot is justified. The addition of a sacrificial soil layer to the LARW side slope cover is a conservative change and is technically justified because it will reduce infiltration through the side slope and thereby have a conservative effect on meeting performance standards. The three most critical performance parameters associated with the radon barrier are infiltration, radon attenuation, and bio-intrusion. Results of the DRC staff review indicate that the Permit performance standards will still be met whether the lower radon barrier is 6 feet thick or one foot thick. Therefore, DRC staff recommends that the Executive Secretary approve the Permittee's request.

Other Permit Changes

Part I.E.1.b, Disposal of Free Liquids – the disposal of free liquids was prohibited by Part I.E.1.b of the Permit. However, on September 10, 2002, the Executive Secretary of the Radiation Control Board approved Amendment 14 to Envirocare Radioactive Materials License 2300249 to allow the receipt, treatment, and disposal of liquid low-level radioactive and mixed wastes. Since the Mixed Waste facility has been in operation, the Licensee has demonstrated that it has the capability of adequately managing liquid radioactive wastes and has requested to generalize its authority to do so. Amendment 14 added License Condition 9.G, which stipulates that liquid waste management and subsequent disposal is confined to the Mixed Waste facility. The activities of the Mixed Waste facility, including storage, treatment, and disposal, are governed by the Part B RCRA Permit issued by the Utah Division of Solid and Hazardous Waste. Necessary modifications have been made to the Part B Permit to accommodate liquid wastes. Amendment 14 revised License Condition 16.F to specify restrictions for receiving, treating, and disposing liquid radioactive wastes. The Waste Characterization Plan has also been revised to address the receipt of liquid wastes. Because of these changes in the License to allow disposal of liquid wastes, Part I.E.1.b of the Permit has been revised by referring regulation of the acceptance of liquids and liquid content of all wastes to comply with the Permittee's Radioactive Materials License.

Part I.E.8, 11e.(2) Waste Management Requirements – this part has been revised by changing the reference for management of 11e.(2) waste and related activities from the requirements of the LLRW Waste Management Plan (RML Condition 59) to the requirements of the Radioactive Materials License.

Part I.E.10, LARW and Class A Waste Storage Performance Requirements – this part has been revised so that LARW and Class A wastes will be managed consistently at all facilities and all site operations. As a result, references to specific facilities have been removed. The heading for this part has been changed to LARW and Class A Waste Management Performance Requirements. Additional changes to this part include:

- Part I.E.10.a.6 was revised to increase the time limit for the temporary storage of LARW and Class A wastes from 180 to 365 days after date of waste entry into the controlled area.

- Part I.E.10.a.7 added the requirement for including the waste stream number on placards, signs, and labels for waste containers.

- New Part I.E.10.a.10 was added to require all containers in storage to be inspected daily.

- New Part I.E.10.a.11 was added to require waste in bags to be managed as bulk waste.

Closure of LARW Container and Bulk Unloading Area – as a result of repeated BAT failures associated with performance monitoring of the storm water and leak collection systems, the Permittee has permanently closed the LARW Container and Bulk Unloading Area. Therefore, all parts of the Permit associated with and referenced to this facility have been struck from the Permit including the following:

- Part I.E.10.b, Waste Management Performance Requirements for the LARW Container and Bulk Unloading Area – this part has been struck from the Permit.

- Part I.E.10.d, Restrictions for Temporary Storage of Mobile Waste – the LARW Container and Bulk Unloading Area has been struck from this part.

- Part I.E.10.e, Prohibition and Restrictions for Dry Active Waste Storage – the reference to the subject facility has been struck from this part.

- Part I.F.2.a, BAT Compliance Monitoring Points for the LARW Container and Bulk Unloading Area – this part has been struck from the Permit.

- Part I.F.11, LARW Container and Bulk Unloading Area Monitoring requirements – this part has been struck from the Permit.

- Part I.H.7, LARW Container and Bulk Unloading Area Reporting requirements – this part has been struck from the Permit.

- Part I.H.22.a, BAT Quarterly Monitoring Report requirements for the LARW Container and Bulk Unloading Area – this part has been struck from the Permit.

- Part I.I.2, LARW Container and Bulk Unloading Area Engineering Analysis Report – this part has been struck from the Permit.

Part I.E.10.c.4, LARW and Class A Waste Storage Performance Requirements for the Containerized Waste Storage Pad –this part has been revised to reflect that management of leaking containers will now be regulated in accordance with the Waste Characterization Plan and Radioactive Materials License instead of the Waste Management Plan. As a result, specific requirements have been struck from this Part.

Part I.E.10.d, Restrictions for Temporary Storage of Mobile Waste – this part has been revised to reflect the transfer of requirements formerly contained in the LLRW Waste Management Plan, (Condition 59 of the Radioactive Materials License). The heading for this part has been changed to Management and Temporary Storage of Mobile Waste. Two new requirements have been added, which pertain to decontamination of equipment that has come in contact with mobile waste, and are included as items 3 and 4 of Part I.E.10.d, respectively:

- Portions of equipment, which have come in contact with Mobile Waste, shall be cleaned to a limit of 500 grams per ft^2 average.

- Equipment decontamination must be performed within the Class A or LARW Cell areas or on approved decontamination facilities.

Closure of LARW Operations Building Wash Bay - as a result of BAT failures associated with performance monitoring of the leak detection system for the wash bay settlement basin, the Permittee has permanently closed the LARW Operations Building Wash Bay. Therefore, all parts of the Permit associated with this facility have been struck from the Permit including the following:

- Part I.E.14.b, Wastewater Management Requirements for the LARW Operations Building Wash Bay – this part has been struck from the Permit.

- Part I.F.2.g, BAT Compliance Monitoring Points for the LARW Operations Building Wash Bay – this part has been struck from the Permit.

- Part I.F.18, LARW Operations Building Wash Bay Monitoring requirements – this part has been struck from the Permit.

- Part I.H.18, LARW Operations Building Wash Bay Reporting requirements – this part has been struck from the Permit.

Part I.F.1.a.2, Addition of New 11e.(2) Compliance Monitoring Wells GW-126 and GW-127 and discontinued water quality sampling of compliance monitoring wells GW-37 and GW-38R – based on DRC review and approval of an 11e.(2) well spacing analysis, Envirocare installed two additional compliance monitoring wells (GW-126 and GW-127) on the east side of the cell in December 2002. Although Envirocare requested that wells GW-57 and GW-58 be removed from the 11e.(2) compliance monitoring network in lieu of new wells GW-126 and gW-127, this is not an option due to the presence of the 11e.(2) ground water mound and the resulting radial ground water flow, which makes GW-57 and GW-58 downgradient wells. However, based on the approval of the 11e.(2) cell performance modeling (Whetstone, July 2001) and Envirocare's August 6, 2002 Permit Modification Request, the Executive Secretary has removed compliance monitoring wells GW-37 and GW-38R as water quality compliance monitoring wells. Wells GW-37 and GW-38R shall be retained as compliance wells for monitoring ground water elevations only.

Part I.F.1.b., Addition of Seven New Mixed Waste Compliance Monitoring Wells and Deletion of wells GW-71, GW-79, and GW-80 at the Mixed Waste Landfill Expansion – in preparation of the phase 4 and 5 expansion of the Mixed Waste Landfill, Envirocare submitted a Class 2 RCRA Permit Modification Request to abandon monitoring wells GW-71, GW-79, and GW-80 to allow construction of four additional sumps for leachate monitoring of the phase 4 and 5 expansion. Envirocare held a public meeting regarding this modification on February 13, 2003, and subsequently no written comments were received by the Executive Secretary. Because radiologic parameters are regulated under the Ground Water Quality Discharge Permit, Envirocare submitted a request for minor modification to remove wells GW-71, GW-79, and GW-80 from the Permit and add expansion monitoring wells GW-118, GW-119, GW-120, GW-121, GW-122, GW-123R, and GW-124. Therefore, Part I.F.1.b was modified to address these changes.

Table 1F, Ground Water Protection Level Exceptions for Mixed Waste Expansion Wells – on August 4, 2003, Envirocare submitted to the Executive Secretary the Background Groundwater Sampling Results, Phase 4 and 5 Expansion, Envirocare's Mixed Waste Disposal Facility, Clive,

Utah. This report summarizes the background sampling results and proposed concentration and practical quantitation limits for the phase 4 and 5 expansion. Table 5-1 in Attachment 5 summarizes the results of the background sampling of the expansion wells and includes statistical data and proposed ground water protection levels. In accordance with Part I.B.1 of the Permit, the upper boundary of background water quality is defined as the mean concentration plus the second standard deviation for any contaminant in any individual well as determined by the Executive Secretary. In accordance with Part I.C of the Permit, ground water protection levels are defined as either the ground water quality standard or the background concentration, whichever is greater. Therefore, based on the statistical background calculations in Table 5-1 of the Phase 4 and 5 background sampling report, the following wells and parameters have been added to Table 1F of the ground water Permit.

Ground Water Protection Level Exceptions
Mixed Waste Expansion Monitoring Wells

Well ID	Parameter	GWPL
GW-118	Gross alpha	55
	Gross beta	686
GW-119	Gross alpha	60
	Gross beta	596
	Ra-226+Ra-228	5.03
GW-120	Gross alpha	64
	Gross beta	539
	Ra-226+Ra-228	5.1
GW-121	Gross alpha	56
	Gross beta	582
	Ra-226+Ra-228	5.42
GW-122	Gross alpha	52
	Gross beta	495
GW-123R	Gross alpha	47
	Gross beta	669
	Ra-226+Ra-228	5.91
GW-124	Gross alpha	57
	Gross beta	809

GWPL ground water protection level

Completion of Compliance Item 4, Background Groundwater Quality Report for New Compliance Monitoring Wells, Part I.I.4 – the Executive Secretary received the following submittals required by Part I.I.4 of the Permit:

- July 29, 2003 report containing statistical calculations of the mean fluoride concentration, the standard deviation, and the mean concentration plus two standard deviations for each Class A compliance well; and
- August 5, 2003 report containing graphs of fluoride temporal concentration trends and an evaluation of seasonal and analytical variations for each Class A compliance well.

- September 17, 2003 report containing background sampling results for monitoring well GW-38R with an evaluation of seasonal and analytical variations. This report included a summary table of conventional and radio-chemical analytical results, time-series plots of conventional and radio-chemical parameter temporal concentrations, and statistical calculations of the mean concentration, standard deviation, and the mean plus two standard deviations for each parameter listed in Table 1C of the Permit. In addition, potassium-40 results, plots, and statistical calculations were included.

Based on a review of these reports by DRC staff, Envirocare has satisfied the requirements of Permit compliance schedule item I.I.4.A and B of the Permit. Therefore, the Executive Secretary has struck this compliance schedule item from the Permit.

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